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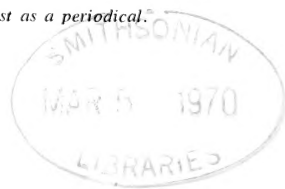
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F.N.C.V. DIARY OF COMING EVENTS

GENERAL MEETINGS

Monday, 10 November—At National Herbarium, The Domain, South Yarra, commencing at 8 p.m.

1. Minutes, Reports, Announcements.
2. Correspondence.
3. Subject for the evening—Aboriginals of North and Central Australia, illustrated with Sir Baldwin Spencer's films which were taken in 1913—the first ever made of our Aboriginals.
4. Election of new members.

Joint Ordinary:

Mr. & Mrs. J. A. Rouel, Flat 1, 4 Seaview Avenue, Hampton, 3188. (Interest—Marine Life.)

Ordinary:

Miss E. Griffiths, 145 Atherton Road, Oakleigh, 3166. (Interest—Fauna Conservation and Entomology.)

Miss V. Meikle, Flat 8, 134 Neerim Road, Glenhuntly, 3163. (Interest—Mammal Survey and Entomology.)

Mrs. L. Murphy, 2 Kemsley Court, Hawthorn, 3123. (Interest—Botany.)

Miss M. Wark, Flat 8, 159 Curzon Street, North Melbourne, 3051. (Interest—Botany and Mammal Survey.)

Mrs. M. E. White, 29 Cornell Street, Camberwell, 3124. (Interest—Botany and Geology.)

Country:

Mr. J. D. Myers, "Rosehill", Myrniong, Vic., 3341. (Interest—Geology.)

5. General Business.
6. Nature Notes and Exhibits.

Monday, 8 December—

GROUP MEETINGS

(8 p.m. at National Herbarium unless otherwise stated)

Thursday, 13 November—Botany Group Meeting.

Wednesday, 18 November—Microscopical Group Meeting.

Friday, 28 November—Hawthorn Junior F.N.C. Meeting in Hawthorn Town Hall, at 8 p.m.

Monday, 1 December—Marine Biology and Entomology Group Meeting.

Wednesday, 3 December—Geology Group Meeting.

Thursday, 4 December—Mammal Survey Group Meeting in Fisheries and Wildlife Rooms, Flinders St. Extn., at 7.45 p.m.

Friday, 5 December—Preston Junior F.N.C. Meeting at 251 High St. (Rechabite Hall) Preston, at 8 p.m.

Friday, 12 December—Montmorency District Junior F.N.C. Meeting, at 8 p.m.

F.N.C.V. EXCURSIONS

Sunday, 16 November—Fraser National Park. Coach will leave Batman Avenue, at 9.30 a.m.; fare \$2.00. Bring two meals.

Sunday, 7 December—Point Lonsdale. Marine Biology and general study. Coach will leave Batman Avenue, at 9.30 a.m.; fare \$1.80. Bring two meals.

Friday, 26 December to Sunday, 4 January—Mt. Beauty with day excursions to Bogong High Plains, Mt. Hotham and other places of interest. Accommodation has been booked for the coach party at Mt. Beauty Chalet at \$6.00 D.B.B. per person per day, individual payment. Coach fare (inc. day trips) is \$20.00, and this should be paid to the Excursion Sec. by November General Meeting. Cheques should be made out to Excursion Trust. Picnic lunches available at a cost of 50 cents.

Excursion Secretary—Miss M. Allender.

The Victorian Naturalist

Editor: G. M. Ward

Assistant Editor: P. Gahan



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Front Cover:

Even the sundew, when in flower, takes on a glory in excess of Solomon. The photograph of the Scented Sundew (*Drosera whittakeri*) was taken by the Editor at Kiata.

November, 1969

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Resin bored by *Martesia striata* Linne, from the Coast of Victoria

By ALFRED A. BAKER*

(Illustrations by Author)

A specimen of a resinous substance, found on the beach two miles east of Ocean Grove, Victoria, during the early part of 1965 by Miss Linda Stewart, had a large number of circular holes bored in it, and in a few of them the white paired valves of a boring mollusc remained.

The specimen, somewhat oval in shape (fig. 1) measured $4 \times 3\frac{1}{2} \times 2$ inches. It had an air weight of 209 grams and a specific gravity of 0.93; a colour range of from pale yellowish-brown to dark-brown, and a distinctive waxy lustre with sub-conchoidal fracture, translucent in thin section. Numerous small bubbles occur in the lighter coloured portions, and a section through the centre lengthwise revealed prominent flow lines. In the warmth of the hand, the specimen developed a slight tackiness.

A solubility test showed it as insoluble in ether and alcohol, but soluble in benzol, carbon tetrachloride and carbon bisulphide. In a flame test, the substance ignited immediately, emitting a small amount of fumes of a strong, persistent aromatic odour.

Comparisons were made with somewhat similar substances as—coastal bitumen from Portland, Victoria; coorongite from The Coorong, South Australia; ozocerite from Boreaslaw, Galicia; asphaltum from Trinidad; fossil resin from Yallourn, Victoria; amberite (fossil kauri gum) from New Zealand; succinite (amber) from the

Baltic Coast; commercial pine tree resin; and as a prepared substance—incense, as used during religious ceremonies.

Although each had their own characteristics; incense, which is prepared from various aromatic resins and barks blended by different formulas was the nearest in appearance, and had a similar distinctive aromatic odour. It was therefore, concluded that this bored material was of that substance. As incense is prepared in the Orient and other tropical regions, it could have been carried by sea travellers, lost overboard in Bass Strait and ultimately stranded on the beach after being attacked by the boring mollusc.

Approximately 70 borings occurred on the surface of the oval specimen, some being only shallow, probably due to marine currents interrupting the boring process. The mature borings measured 3mm. in diameter on the surface, to 4.5mm. at the widest diameter inside, the depth being 5mm. Nine borings contained remains of valves, most of which were damaged. One complete pair of valves extracted from its boring enabled identification.

Description of the shell

The valves, pear-shaped in outline, measure 5mm. in length; 4mm. in height; white outside with a white glazed surface inside. A groove (sulcus) slightly diagonal from the ventral to the dorsal edges of both valves divides each into an anterior portion

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of denticulated concentric ridges and a posterior of smooth concentric ridges (fig. 2A.). In the umbonal region the denticulated ridges form funnel-shaped pits (fig. 2B.), and a sickle-shaped flange extends over the umbo. A smooth callum almost encloses the pedal gape (fig. 2C.) indicating that the boring process by the animal had ceased. A shrivelled siphonoplax protruded from the posterior.

This description agrees with *Martesia striata* Linne (Turner 1955); excepting, although mature, the borers are diminutive, probably due to the nature of the material bored and its movement by marine currents. *Martesia striata* located in timber piles in the port of Sydney attained a

length of $1\frac{1}{2}$ inches (Johnston & McNeil 1941).

During the boring process by *Martesia*, waste material is ejected by a jet of water, therefore the animal does not absorb toxic substances which may be contained in the resin; whereas the Toredos (Shipworm) digests the material through which it travels.

Boring by marine animals into resinous material is unique; the Pholadidae usually bore into mudstone, limestone, coral, thick-shelled mollusca and wood. However, Sowerby (1849) describes *Martesia teredinaeformis* ". . . in cake of floating wax off Cuba . . ."; and Buckland (1879) writes—

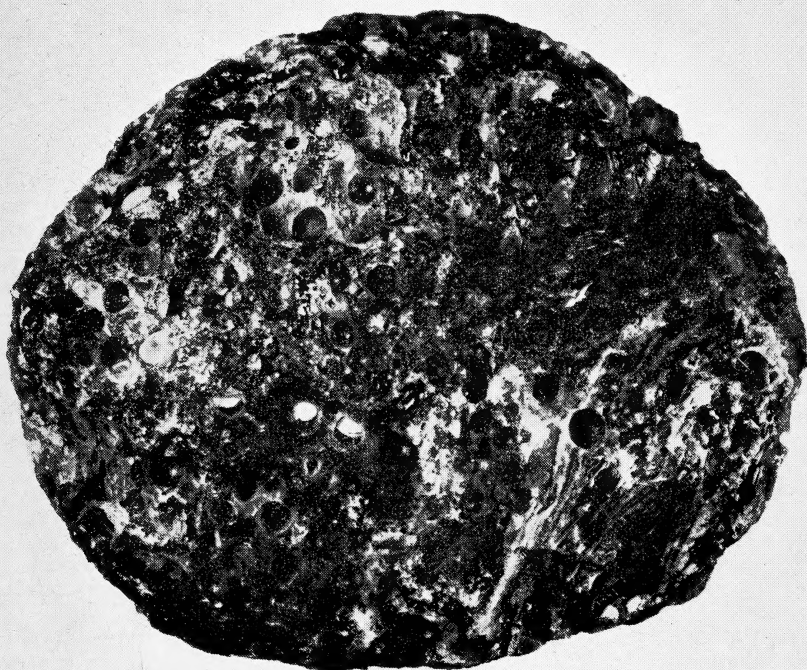


Fig. 1.

Resin showing borer holes. Scale in inches.

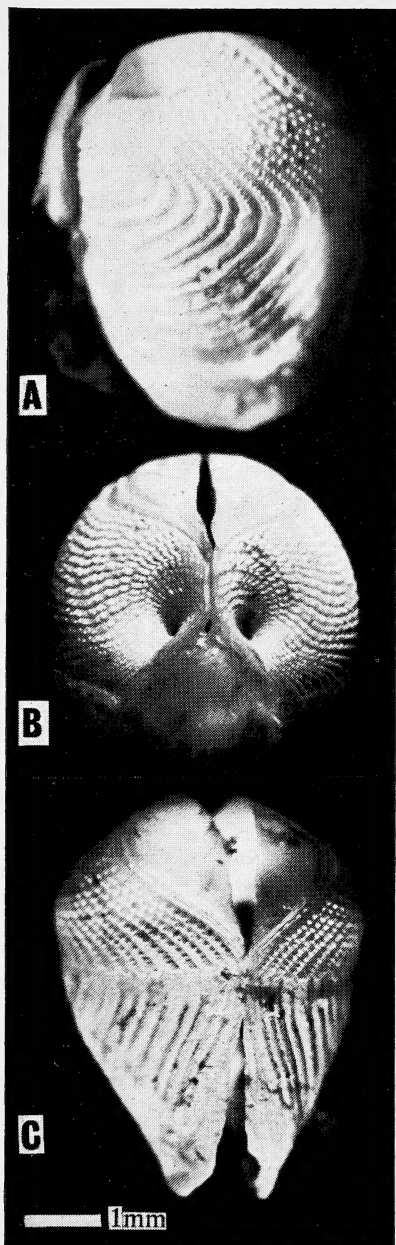


Fig. 2.

- A. Right valve, showing mesoplax, anterior denticulated ridges and posterior smooth concentric ribs.
 B. Anterior view, showing callum, denticulated ridges, funnel-shaped pits and mesoplax.

"... in Mr. Cumming's collection there is a group of Pholads living in wax ...",

then continues—

"... Mr. Woodward also showed me a lump of gum from Australia (probably floated down some river into the sea) also bored by a Pholas".

Woodward (1910) refers to probably the same specimen with—

"*Martesia australis* in (fossil?) resin, on the coast of Australia".

To bring occurrences more recent; wharf piles of Turpentine (*Syncompia laurifolia*) which, for a number of years were considered resistant to marine borer attack (probably on account of the oleo-resin layer of the inner bark of the tree) (Boas 1947), were found to have been seriously bored by *Martesia striata* causing disastrous results in the Port of Sydney (Johnson & McNeil, 1941).

This occurrence from Ocean Grove appears to be the first described record of Pholas boring into a wholly resinous material, and probably the first note of *Martesia striata* occurring more southerly in Australian waters than Sydney, N.S.W. (Hedley 1901).

Portion of the specimen is housed in the Melbourne University Geology Department collections. Reg. No. 3891.

Acknowledgments

To Miss Linda Stewart, whom I wish to thank for allowing investigations of the specimen; to Mr. V. Biskupsky, Geo-chemist, Geology Dept. University of Melbourne, for geo-chemical assistance in determining the resin; and to Dr. Ruth D. Turner, Museum of Comparative Zoology, Harvard University, Cambridge, U.S.A., for confirmation of the boring species.

- C. Ventral view of the two valves, showing callum, denticulated ridges, concentric ribs and the gape.

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Some Thoughts on Sperm Whale Head

By VICTOR JACOBS

Some weeks ago when some friends mentioned that they had a block of land at Loch Sport we made an arrangement to spend the Easter of 1969 with them.

At home I took out the R.A.C.V. Gippsland Lakes map to locate Loch Sport. The Lakes National Park was there and so was Lett's Beach. The formed road became a bush track and ended at the entrance to the National Park. Our friend's later map and their information brought us up to date. Some eight years ago, a massive subdivision took place on the narrow isthmus that separates Lake Victoria and Lake Reeve. This piece of land was originally called Sperm Whale Head, and it is a pity that lack of imagination allowed the subdivided area to be named Loch Sport, for although there is plenty of modern sport there, the lakes are quite unlike lochs. From a natural history point of view the area is certainly better than the name would indicate.

The actual Lakes National Park occupies 5,500 acres and the new sub-division reaches to its western boundary. Not only housing development has altered the area—oil fields lie to the south. The Woodside rig is visible on the southern horizon from the high dunes that fringe the Ninety Mile Beach in the vicinity. A bitumen road leads to within six miles of the Loch Sport township and was constructed for the convenience of the oil and gas pipeline contractors. It now makes the approach to the area much easier. A causeway constructed across Lake Reeve for similar commercial purposes allows the car traveller to reach the top of the dunes overlooking this extensive and magnificent beach. A further causeway at the township itself is projected and will make the beach even more available.

Armed with these facts we set out with the van to travel the 160 miles to Sperm Whale Head, wondering whether the present ease of access to



Mahogany Gums growing alongside one of the tracks in the National Park.

Photo: Author.

one of the previously most inaccessible parks would have damaged it and to what degree.

Leaving rather late on Thursday evening we parked, after midnight, at Dutson Downs; and next morning, sighting some timber to the north, I set off along an easement. This area is used for sewage disposal, which is quite evident from the many shallow channels visible; as well as attendant odours. In the open areas flocks of Yellow-tailed Thornbills and White-faced Chats were seen. The former took refuge in the odd trees as I approached, while the Chats moved ahead as I walked. They rested on the fences when I stopped. I also noted a Brown Hawk, Willy Wagtails, Welcome Swallows and a group of Magpies.

The wood was separated from the flats by a fence; and I passed through it into what was an extremely "cosy" area. The cosiness was partly caused by the warm sun and the windless day, but also the combination of open spaces bedecked with succulent salicornias and ground covering composites, these being enclosed by eucalypts, tea trees and wattles. Three Red Wattlebirds fled while a couple

of curious Grey Fantails came near. A Grey Thrush called fluidly as I returned to breakfast. (After reading Ellen Lyndon's "A Day Tour to Dutson" in the *Victorian Naturalist* for May, 1969, I realised that there was far more in this area than met my eye.)

We reached our friend's block before midday, and left three days later at approximately the same hour. This limited time is nowhere near enough time for an extensive survey of this area, and I am not qualified to make such a survey, but with the warm sunny days, and pleasant nights, it was possible to gather some impressions which may tempt some of our readers to visit the area for themselves.

THE VEGETATION

Ewart's flora refers to *Thryptomene miquelliana* as being confined to Sperm Whale Head, and I expected to have to search for it; but as I stepped from the car I was amidst masses of it. Many of the blocks have had a chain cleared at the front, and when regeneration occurred, a massive growth of this species took place and is still occurring. Plants of many sizes have thickly covered these treeless

strips, ranging from two inches to two feet in height. The specific name of this thryptomene has reverted to that of *T. micrantha*, the Tasmanian endemic with which it is conspecific. In the National Park the thryptomene is common and some pure stands are six feet high and very dense. One soon came to appreciate that "confined" does not necessarily mean rare.

One or two of the owners of established blocks have succeeded in "ridding" themselves of the thryptomene, and the buildings now stand on green carpets of lawn, broken only by the rose, geranium or other exotic shrub. It is a ghastly thought to imagine the whole subdivision being denuded in this fashion. At the present juncture these open grassy plots do serve a useful purpose; as several magpies use them as feeding areas. Magpies and their companion Mudlarks seem to prefer this open habitat. Indeed from observations at Narre Warren North, these open spaces are essential for their existence. There, after a vacation, when the grass has had an opportunity of reaching a height of about a foot, the magpies and mudlarks are absent. As soon as the mowing is complete, they

return for a trio of reasons—the flat area with its excellent visibility gives a freedom from sudden attack by predators that may lurk in dense herbage; there is renewed access to their subterranean food; and there is an ample supply of chopped and minced meal supplied by the spinning blades.

Three banksias are common here—*Banksia serrata* (the Saw Banksia, of which there are some huge specimens on the higher ridges of the subdivision and many in the national park); *Banksia integrifolia* (the Coast Banksia, which is not so common but still general throughout the area); and *Banksia marginata* (the Silver Banksia). The latter is the least abundant of the three, but by no means rare. The latter two had a number of flowering spikes to the delight of the birds.

Leptospermum laevigatum (Coastal Tea Tree) was common over the whole area as a slender tree up to 40 feet high, and is also regenerating very well. The low growing *L. micro-myrtus* was seen on a walking track that led north from the southern arm of the car track that follows Lake Reeve to the head.

The Mahogany Gum grows natu-

Banksia integrifolia
(Coast Banksia)
in flower.

Photo: Author



rally in the park. The trees seen ranged from small slender saplings to mature adults. This range of size was also noted with the River Red Gum and the Manna Gums. The alternative common name for the latter is Ribbon Gum, but this name does not suit the local population as the bark does not hang from the branches in the usual ribbon-like manner. Along the small walking track mentioned earlier, a number of eucalypts were noted with a definite mallee appearance (possibly peppermints). Along this track variable Bossea Pine Heath, and Prickly Broom-heath were seen in flower frequently.

On the shores of both Lake Reeve and Lake Victoria many halophytes were present. I recognised New Zealand Spinach (*Tetragonia tetragoides*) and Seaberry Saltbush (*Rhagodia baccata*). There were many other chenopods. Here too the ripe plumes of patches of Common Reed brightened the day with their golden bronze.

In amongst the dunes of the Ninety Mile Beach were patches of Marram Grass, Climbing Lignum (although creeping here), Knobby Clubrush, Cushion Bush and large dense bushes of an *Olearia*.

The northern shores of Lake Reeve, which apparently are subjected often to inundation, have ranks of red and green salicornias marching along these mud flats.

Some of the most interesting vegetation studies were not so much in the park itself, but on the subdivision. Mention has already been made of the rapid regeneration which has occurred on account of the removal of the shade-giving tea trees. On the low lying blocks, where eventually the concrete kerbing will form a firm bed for parking vehicles, was a veritable seed bed of native plants. These

unfortunately are doomed; for even if the concrete is not poured for years, the rolling rubber wheels of "progress" will crush them. Some however have been rescued from that fate. I recognized among them, seedling eucalypts, thryptomene, a species of *dodonea*, *leptospermum*, Running Postman, Spike and Hop Acacias, Pine Heath and Austral Indigo. There were many that I did not know.

FAUNA

Kangaroos—The species found here is the Great Grey Forester, and large numbers of them graze at the eastern end of Sperm Whale Head. I only saw solitary animals, but quite frequently. The first one that we saw gave a great leap, and disappeared, presumably halting a short distance on. When I moved slowly after it, expecting to see it again at that point, it bounced up again, a further 50 yards ahead. It then disappeared again. It must have scuttled for that fifty yards with its head below the surface of the vegetation. This popping-up leap for a quick look-see, followed by the hunched scuttling action seemed to be the regular pattern of behaviour of these kangaroos when disturbed. This was proved on subsequent occasions. If I happened to be looking in the correct direction, I would see the first bounce, but after that no more sight of kangaroo. If my gaze was turned away when I heard the first thudding crashing noises I would have no glimpse at all of the animal. One, which I disturbed, must have been snoozing beside the track, for as well as the first high periscoping bound I was able, in the thinner bush, to watch the hunched posture as it hurried away.

Wattle-birds—Both Red and Little Wattle-birds heard and seen over the whole area frequently, but especially where the banksias were in flower.

Grey Butcher-bird—Not sighted in spite of searching, but heard each dawn singing gloriously close by our camp site.

Rufous Fantail—The call was heard distinctly and the birds briefly sighted in thick scrub. Part of this identification is based on the shyness of the bird, for if they had been Grey Fantails, they probably would have remained longer at that spot, or even allowed an approach.

White-browed Scrub-wren — This species made itself known on a side track in the park, and the effect of its scolding was to attract other small birds. These were an Eastern Spine-bill, a White-eared Honeyeater, Brown Thornbills and a Grey Thrush. They made their fleeting inspections and moved on. Next morning, not one hundred yards from an occupied residential block, I saw a much tamer Scrub-wren working its way along a tree branch quite in the open, and not diving for cover as I moved very near.

Yellow-winged Honeyeater — Occasional sightings.

Mudlarks—One family was seen in the cleared area at the end of the Head.

Yellow-faced Honeyeater—One pair noted playing chasey and insect hunting in the outer foliage of eucalpts.

Bronzewing Pigeons—Seen on a few occasions when disturbed while driving. They flew from the track and were easy to observe as they perched nearby.

Grey Currawongs—Seen and heard throughout the area.

Blue Wrens—They were common in the scrubby places, although very few males in full plumage were seen.

Black Swans—These were particularly abundant on the shallow western extremity of Lake Reeve, and seen

in two's and three's elsewhere on open water. Frequently at dawn and dusk pairs flew across the narrow stretch of land. In these large flocks of swans were lesser numbers of Pelicans and Hardhead Ducks. Here too were numbers of Pied Cormorants flying directly or perched immobile, as well as a number of erratic flying, fishing Crested Terns.

Just as with the land birds which exhibit a certain gregariousness between species, so it was on the shore. At one spot on Lake Victoria I saw four Black Swans, two Spur-winged Plovers, half a dozen Silver Gulls and one White-faced Heron within a few yards of each other. It was possibly the feeding opportunities that brought them so close together. As I left the small group a movement above caught my eye. A pair of White-breasted Sea Eagles sailed gracefully towards the far side of Lake Victoria.

Rosellas—Crimson and Eastern Rosellas were quite common.

Kookaburras—Heard and seen infrequently.

Cockatoos—A flock of six or seven yellow-tailed Black Cockatoos was seen working through the tree-tops in thick tree cover in the park.

Dotterels—Many small dotterels were seen feeding on the far side of Lake Reeve, but even with binoculars it was impossible to identify them. As I moved along the shore to approach them a group of ten White-faced Herons left off feeding and flew to perch in a straggly banksia. A second banksia close beside had a flock of feeding Wattle-birds, and when a White-eared Honeyeater attempted to dine at the same "table", he met a hostile reception and quickly retreated.

Black-faced Cuckoo-shrike — One pair alone was seen at the edge of a

dried lagoon near the end of the heads.

Australian Ravens?—The few seen were on the wing and specific identification not possible.

SPIDERS

It was impossible not to be aware of Orb Weavers as their webs were the largest that I have seen. In almost every suitable position they were spun, blocking most apparent open spaces between trees. One wide track was spanned by the largest of them all, the main line being all of eighteen feet long. Another, a little shorter, blocked the way out for our car each morning on our friends' block, and it was with reluctance that we drove through the large well constructed orb. We were glad to see that although the vertical line snapped, the main horizontal line stood firm.

On our last evening I kept watch, and was able to see the large spider come down to attach its vertical thread to a small twig. I noted the time, and just an hour later the web was complete. This latter inspection was made by torchlight. The spider had already wrapped up an insect caught that evening, and when the beam of the

spotlight attracted a moth into the web he rushed at it and soon wrapped this in a silken parcel too. After the first two slow turns to swathe it in silk, he held the partly wrapped bundle by the ends with two legs, and with others spun it like a bobbin on a spindle and quickly finished the parceling. The moth's eyes gleamed like gems each time they came into the torchlight. The short time we watched was however too long for two more moths, who also followed the beam into the web. Feeling we had given enough assistance to the spider, we left her well stocked but still adorning the centre of the orb.

A few interesting hours were filled the next morning, and then we were on our way home, refreshed, and intending to return, hoping that the nature of this unusual and enchanting area would not suffer too much from progress and development.

ACKNOWLEDGEMENTS

To Mr. Court of the National Herbarium for plant identifications, and to Mr. Cook, the Ranger at the National Park for general and specific information.

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Unique Aboriginal Flint Implement from Cope Cope, Victoria

By ALDO MASSOLA*

The unique flint implement here described, and which for convenience will be called "the Cope Cope implement", was found by Mr. Sam Grewar in about 1960 while ploughing one of his father's paddocks, about half a mile from the Grewar's Homestead near Cope Cope, a township about six miles south of Donald, in west central Victoria.

The country around Cope Cope is low-lying, and characterised by the presence of several lakes, both large and small, and salt and freshwater, which drain the surrounding country. One of these depressions is called Lake Cope Cope, or Brown's Lake, and it may be said to be the end of this local drainage system: perhaps it is situated a little higher than the others, but whatever the reason, it only fills with the overflow from the other lakes.

The name "Cope Cope" is descriptive of this fact. According to Brough Smyth's *The Aborigines of Victoria* an aboriginal defined the meaning of the word as follows:

"You take one big fellow bottle, and two, three, little fellow bottle. You put water out of little fellow in big fellow bottle. Then big fellow all the same Cope Cope".

The Grewar's Homestead is built on a ridge running east and west just south of this lake system, and this ridge is a logical place for an aboriginal camp, it being not far from semi-permanent water, and yet above flood level; and from it a good view can be had of the surrounding country. However, no sign of a camp is discernible now. Years of ploughing and fallow-

ing have effectively turned the soil over, and any camp debris or small implements that may have been there have been ploughed under. A camp-site must have existed, nevertheless, because the Grewars have a number of millstones, hammerstones, axes, and anvils, all made from the usual diabase, quartz, and quartzite, as well as a large nosed-scraper made from the same variety of flint as the implement now under discussion. These were all picked up during ploughing operations on, or in the vicinity of, the one paddock.

The Cope Cope implement was accidentally broken in two by Mr. Grewar, but the two halves were neatly glued together, so that it is complete. It may be described as a large flint flake, $6\frac{1}{2}$ in. in length, and $5\frac{3}{4}$ in. in width, square at one end, and rounded at the other. The square end has a maximum thickness of 1 in., increasing at the centre of the flake to about $1\frac{1}{4}$ in., and reducing to a natural sharp edge on the rounded end and on one side of the flake. The bulb of percussion formed one of the two corners of the square end, but most of it was trimmed off. Although the rounded end is sharp, it does not appear to have been used, the few indentations around its periphery being probably accidental. Some of the cortex adheres to one of the faces of the implement, and this face has been subjected to considerable chipping, in order to produce a symmetrical, blunt, pick-like point on the second of the two corners of the thick square end (the first being

*4/18 Wolseley Street, Mont Albert, Victoria, 3127.

the striking platform with the remains of the bulb of percussion).

The other face shows no sign of retouch, and is as when first struck off the matrix. The implement is therefore a uniface symmetrical-sided pick. As far as I know, no similar artifact has ever been described.

The material of the Cope Cope implement (and of the nosed-scraper above mentioned) is a grey fossiliferous flint, heavily mottled with dark blue-grey, and has a high gloss, the latter probably produced by exposure. A third implement of the same material, a small side scraper, was found by Mr. Ron Falla, of Litchfield, and myself, on a small campsite on Sammy's Lake, about 24 miles north-east from Lake Cope Cope. The material of these three implements is strongly reminiscent of the flint found in the Cretaceous chalk of England.

Being so alike in colour to the English flint, and since most south-eastern Australian flint implements

known to me are from unmottled material, my first impression was that these implements had been made from flint-ballast jettisoned from early sailing ships at some places along the Australian coast, such as at Mud Island, at the mouth of the Yarra River, in Melbourne; and at Kirton Point, Port Lincoln, South Australia.

However, comparisons with samples from these dumps proved my hypothesis to be incorrect; but no similar flint was found in any of the Melbourne and Adelaide public and private collections examined by me. The Cope Cope implement was therefore submitted to Dr. K. Abele, Palaeontologist at the Mines Department, in Melbourne, in the hope that his identification of the fossils imbedded both in the flint and in the cortex could be of use in determining the provenance. He pronounced them as being fragments of bryozoa, fossils abundant in limestones and marls of Tertiary Age in south-east Australia.



The Cope Cope implement showing both faces; the right hand photograph showing chipped or retouched face.

Photo: Author

It would thus appear that the flint is from an unrecorded deposit, which could be anywhere, even along the ridge overlooking Lake Cope Cope, and probably small enough to escape the attention of the locals, but not of the observant aborigines.

Such a "lost" native flint quarry exists on the southern slopes of a ridge close to the banks of the Murray River, between Spring Cart Gully and Calperum, downstream from Renmark, in South Australia. I had seen it some years ago, and chancing to be in the vicinity subsequent to Dr. Abele's identification of the fossils, this deposit was re-examined by me.

It is indicated by a large quantity of broken pieces and chips covering an area of about 300 feet by 50 feet, and the flint is honey-coloured, strongly mottled with dark brown, not unlike the flint found on Danish kitchen middens. Although it is not of the same colour as the material of the Cope implement, it shows that mottled

flint does occur in the south-east, and in such unlikely places as the stoneless country of the Murray River bend.

As far as the use of the Cope implement, I can offer no suggestion, nor could Mr. H. M. Cooper or Mr. N. B. Tindale, the well-known South Australian Museum authorities on stone implements, with whom it was discussed. However, Mr. Tindale, did suggest that, in use, the implement must have been held with both hands gripping the fortuitous cutting edge, and that they would have been protected from being cut by a covering of bark or of gum placed over the edge, as he has seen done by recent aborigines in Northern Australia.

Acknowledgments

My thanks are due to Mr. and Mrs. Brian Grewar, for allowing me the freedom of their collection; to Dr. Abele for his identification of the fossils; and to Mr. Cooper and Dr. Tindale for examining the implement and for their useful comments.

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F.N.C.V. Excursion to Trentham Falls and Blackwood

17 August, 1969

By ELIZABETH K. TURNER

The ambient temperature was about 54°F but there was plenty of sunshine and no wind, as a bus load of 35 Melbourne members and several car loads, headed N.E. towards Bacchus Marsh; our leader being Bruce Fuhrer.

At the top of Anthony's cutting we turned north through typical Mallee country on the Coimadai road. A walk was made along the roadside where the Bull Mallee, (*Eucalyptus behriana*) and the Moonah (*Melaleuca pubescens*) flourished. *Myoporum deserti*, the Turkey-Bush was in full, honey-scented flower, and we noted the salt-bushes, *Rhagodia parabolica*, *R. nutans*, and *R. enchylaena*, the Barrier Saltbush with short, greyish, cylindrical leaves.

There was also "Common" *Cassinia aculeata* (Dogwood), *Eutaxia microphylla*, and many flowers of *Clematis microphylla* forming tangled mats over the shrubs.

At Coimadai we noted the yellow gum, *E. leucoxydon*. We joined the Bacchus Marsh-Gisborne road north along the "lava residual" formed by the ancient southward flow of lava from Mount Bullengarook. On the east side there is a steep slope down to the Coimadai Creek, and on the west to Goodmans Creek, and beyond this the tree-clothed Blackwood Range and Lerderderg gorge.

Here we saw dead gum trees festooned with white Sulphur-Crested Cockatoos, giving the appearance of magnolia trees, and a wedge-tailed eagle being attacked by both a raven

and a magpie. *Acacia pycnantha* (Golden Wattle) was in flower in the dry, stony ground.

Mt. Bullengarook, 2207 ft. was almost denuded of trees, but Mt. Blackwood, 2415 ft. is still clothed with vegetation.

At Gisborne we joined the Calder Highway to Woodend and then turned north-west again, through Tylden, noting Snow Gums (*E. pauciflora*) along the roadside, to Trentham Falls where the Coliban river has undercut a Tertiary lava flow which falls away along the vertical joint plains, rather like wavy "organ pipes".

Here we joined with three bus loads (122 members) of the Geelong Field Naturalists Club, led by Mr. Jack Wheeler, their President. Barbecue lunch was enjoyed in the sunshine, over-looking the falls, and then on a walk to the foot of the falls we found the Blanket Fern (*Pleurozaurus rutifolius*) and the necklace fern (*Asplenium flabellifolium*).

At the top of the falls we found *Todea barbara*, the Austral King-fern.

A koala was sighted feeding in a tall, broad-leaved peppermint (*E. dives*), and amongst the birds at this spot we listed:—

Galahs, Goldfinches, Grey Thrush, Blue Wrens (with some immature specimens), Yellow-tailed Thornbills, Brown Thornbills, Grey Currawongs, various Honeyeaters, White-browed Scrub Wren, Crimson Rosellas, White-throated Tree Creeper, Flame Robins, and Kookaburra.

Acacia mucronata (Narrow-leafed Wattle), and *Acacia verniciflua* (Varnish Wattle, Bacchus Marsh variety), were seen in flower here.

The combined Geelong and Melbourne parties then went on across the Lerderderg river into Blackwood, where we tasted the mineral water issuing from a spring in the rock face. Here, the main vegetation of the forest is Candlebark (*E. rubida*), Messmate (*E. obliqua*), and broad and narrow-leafed peppermint (*E. radiata*). Blackwoods and other *Acacias* were quite common, and many tall Greenhood Orchids (*Pterostylis longifolia*) were found in flower.

A Golden Whistler was heard, and a Spotted Pardalote was both heard

and observed here, as were an unpleasant-looking mass of lively Gum Saw-fly larvae on a young gum sapling. Here, we collected *Pultenea gunii* (Golden Bush Pea) and *Pultenea daphnoides* (Large-leaf Bush Pea), both not in flower.

Acacia aculeatissima, the thin-leaved scrambling wattle, was in flower, also *Pimelea axiflora* (the tough or Bootlace Pimelea).

Pink and white heath (*Epacris impressa*) was in abundance on the hillside which we ascended to Shaw's Lake and the Lookout. We departed from Blackwood and travelled via Myrning on to the Ballarat road and returned to Melbourne as darkness fell.

Lestis bombilans

By A. J. SWABY

In Spring 1938, our late member, Harold Smith, his son-in-law Gordon Fraser, and I camped in the Black Range, Grampians. Coming back to the truck ahead of the others, I noticed a perfectly round hole in the dead flowerstalk of a grasstree and half an inch across.

It reminded me of a flute. I broke it off and blew. Vigorous buzzing shook the stalk.

I broke it open and seven large bees appeared, apparently not yet active after winter. Very beautiful they were, shining green with golden bristles on the legs.

We sent a specimen to our late

Tarlton Rayment. He recognised them and asked us to find the food plant. We later saw several in flight, but only one stopped, on Nodding Blue-lily, and that for no food.

McKeown records them in Blue Mountains and suggests the grass-trees as the probable source of food. In that year, although we explored widely, no grasstrees flowered.

We found a few more nesting in the stalks, all in Black Range. They have been reported west of Victoria Range.

Many of these problems await the attention of observers living in the bush, if only we can enlist their aid.

Rediscovery of *Calochilus richae*

By DAVID JONES

This orchid which had been lost to science for forty years was rediscovered again last season by a pair of orchid enthusiasts. *Calochilus richae*, one of the State's rarest and most remarkable orchids, was first noticed by Mrs. Edith Rich of Rushworth. A keen orchid collector with many notable local finds to her credit, she sent three specimens in a batch of orchids to W. H. Nicholls in October, 1928. He at once recognized its distinctness from all other species and named it in honour of the finder. The locality was given as approximately five miles south of Rushworth. The orchid was not sighted again for a further forty seasons although many hunted for it. In its absence theories were put forward that it was nothing

more than a teratological mutant, or an infertile freak which had turned up out of the blue. Some wondered if the species had been lost in one of the many loads of gravel that have been, and still are being taken from that area, and spread over surrounding roads.

The answer was supplied on Sunday, 27 October, 1968, when John Jamison, a keen local naturalist, was out looking for suitable orchids to capture on movie film. He had discovered a patch of Beard-orchid leaves earlier in the year, and upon revisiting the area later with his wife, noted that quite a few were different from the normal and the first of the type he had seen. He collected a specimen and took it for identification

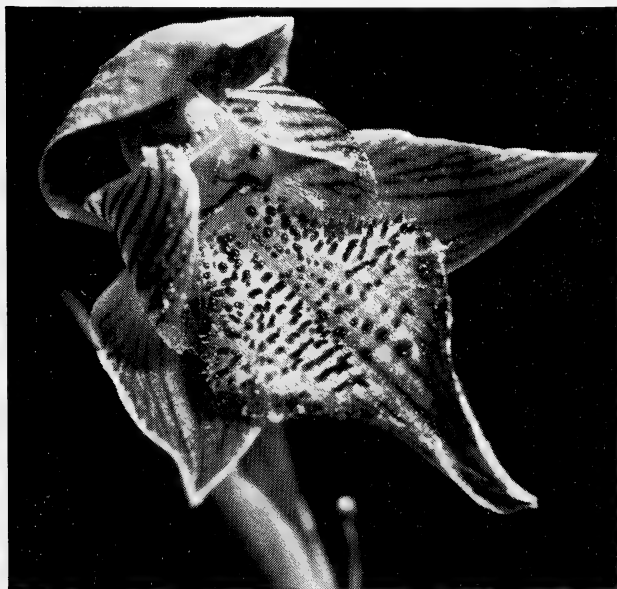


Photo: E. Rotherham

to Ken King the local authority on the Rushworth area. Ken, who had been hunting for the same orchid for many years, recognized it at once and realized the importance of the find to Australian orchidology. Ken had aptly described the labellum over the phone to Mr. Ted Rotherham, as "resembling a spike roller". The author was Ted's self-invited companion on a hurried trip up to Rushworth on the day following the find. John Jamison, the rediscoverer, had kindly made a trip over from Kyabram to show us the exact locality.

A quick, close scrutiny of a collected specimen under the lens showed that the orchid was indeed *C. richae*, unique because of the short spikes and hooks scattered on the upper surface of the labellum, and the curious channelled, entire tip of the same organ.

At the site John soon picked up a solitary individual, but it was half an hour before the main colony was found only about one hundred yards further on. Twelve plants were scattered amongst the fallen leaf litter of the Red Ironbarks, the dominant eucalypt in the forest. The plants were confined to a small area and an extended search of the surrounding hill failed to reveal further specimens. They varied from dwarfs with solitary flowers up to more robust plants, about 36 cm. high, bearing up to five flowers in various stages of development. Many had obvious and well developed seed capsules indicating at least that the species was fertile. The plants appeared to be in good condition and from Ken's remarks it was apparent that the area was enjoying a bountiful season. The species was located about half way down a gentle slope facing south, and growing in a shallow stony skeletal Ordovician soil so typical of much of the area. Other orchids were quite common, especially

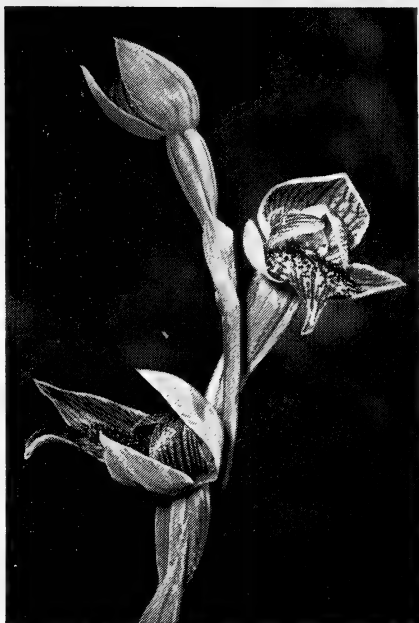


Photo: E. Rotherham

Calochilus robertsonii; each time this was noted a hasty examination was made to ensure that it was not actually *C. richae*, although the two are not easily confused, once seen. *Caladenia dilatata*, *C. angustata*, *Thelymitra aristata*, *T. rubra* and *Microtis unifolia* were also scattered through the area. No *Calochilus imberbis* were seen and they did not appear to be in the immediate vicinity. This is of interest because among the original collection of orchids sent to W. H. Nicholls, were specimens of *C. imberbis*. However the information available does not indicate that the two species were actually growing together, and they may have been collected from different localities on the same day. Immediately up the slope from the orchids was a belt of green flowered *Grevillea alpina* and blackboys (*Xanthorrhoea australis*) many of which had magnificent spikes towering in the air. Other plants common to the area

were *Brachyloma daphnoides*, *Cheiranthra linearis*, *Cassinia arcuata*, and scattered tussocks of wallaby grass (*Danthonia* sp.).

The weather was cool and muggy when we first arrived at the locality, and it was quite noticeable that the sun-orchids were not at their beautiful best. As well, the first specimens of *Calochilus* seen were only partly open, the lateral petals still being crossed in front of the column. Within an hour the sun broke through the clouds and the temperature quickly rose. The *Thelymitras* opened wide in response to this and as well, the *Calochilus* flared their petals, lowered their labella like drawbridges, and soaked up its warming rays. As *Calochilus* flowers normally only last 1-2 days this behaviour in relation to the sun is most interesting. The same phenomenon is particularly noticeable in another member of the genus, *C. imberbis*, which is at its best on a warm sunny day.

Calochilus richae is a unique member of a very interesting genus. It is quite probable that the colony described is the original type locality and the orchid is not represented anywhere else.

It is certainly rare as forty years have passed since the first sighting and many people have combed the Rushworth forest in the intervening period. As the colony is so small, a slight miscalculation on man's part could erase it from the earth's surface forever. In addition to *Calochilus richae* the particular locality abounds with other

oddities. A completely bald *Calochilus* distinct from *C. imberbis* is scattered throughout as well as a spotted form of *Thelymitra aristata* and a magnificent form of *Calochilus robertsonii* with a deep reddish black labellum, column and lateral petals. Such a fascinating area should be set aside so that the future of these orchids is assured and coming generations of orchidologists can see them growing in situ, and appreciate them in the natural state, rather than from herbarium specimens.

Already the indiscriminate gravel quarrying which goes on in the area poses a very real threat to the survival of these plants. Having visited the site, one feels compelled to register the strongest possible plea for its future safety and the conservation of the species. It is sincerely hoped that some responsible authority will consider the area worthwhile preserving and carry out the appropriate steps. The party feels that fencing the area would be inadequate, as such enclosures tend to attract attention to the plants. The species is obviously capable of existing in the natural environment, and its survival could be virtually assured if removal of gravel from the Rushworth State Forest was totally prohibited. It would indeed be tragic if these orchids were to be spread over the country's road surfaces. As one observer stated "It has taken the Rushworth forest one hundred years to recover from the effects of gold mining".

Don't let's turn back the clock now.

Flowers and Plants of Victoria in Colour

Copies of this excellent book are still available, and of course would make a wonderful gift. They are obtainable from the F.N.C.V. Treasurer, Mr. D. McInnes.

Field Naturalists Club of Victoria

General Meeting

13 October, 1969

The President Mr. E. R. Allan was in the chair, and about two hundred members and friends were present.

Apologies were received from Mr. J. Baines; and per Mr. R. Taylor, from Mrs. G. Taylor, Miss Jean Blackburn, and Dr. M. Wanliss who are in Western Australia.

Miss Young reported that Mr. Vic Miller had now completely recovered from his accident, and that Mr. and Mrs. E. S. Hanks were in Townsville.

Mr. Allan announced that Mr. K. C. Halafoff died a few months ago. He is especially remembered for his interest in and writings on the lyre bird, published in the *Naturalist*. He analysed the music of the lyre bird with special competence. Members stood for a minute in silence as a tribute to his memory.

The minutes of the last meeting were taken as read on the motion of Mr. W. Woollard and Miss M. Butchart.

Twelve new members whose names appear in the October *Naturalist* were elected on the motion of Mr. A. J. Swaby and Mr. Morrison. Mr. R. Taylor reported on the "Save Our Bushland Action Committee" which has arranged a meeting in the Palais Picture Theatre for which leaflets advertising it were available. Leading Conservationists will prepare a charter for conservation, in which Mr. D. Lee, Dr. M. Calder of Melbourne University Botany School, and Dr. Moseley of the Australian Conservation Foundation will be assisting.

A message from the Editor asked members for more items for the *Naturalist*.

The subject for the evening was "Geology and Other Aspects of Flinders Island", by Mr. Keith Darragh, Palaeontologist at the National Museum of Victoria.

By a blackboard diagram and maps he explained the position and features of Flinders Island, and coloured slides gave a clear idea of the nature of many parts of the island—the largest of the Furneaux Group in eastern Bass Strait off the N.E. coast of Tasmania. The smaller ones of the group are Cape Barren, Clarke, Preservation Is. and others. The Group was named in 1776 after Tobias Furneaux who sailed on

the east side of the group. Later a ship sailing to Port Jackson was wrecked at Preservation Is. and the sailors were rescued from there.

Matthew Flinders surveyed the Islands and made notes on natural history and geology, and the possibility that there was a strait which Bass and Flinders later proved. He sent the first Wombat to England in 1798 from Clarke Is. Now they are exterminated. Sealers were sent there because of reports, and a large colony of seals was nearly wiped out in about 20 years. Sealers settled on the island, burnt the vegetation and shot Kangaroos and other animals for food. Many small animals were exterminated. Apart from sealers, there were very few visitors to the Island. In 1831 there was an attempt to settle 200 remaining Tasmanian aborigines on Flinders Island.

Now there is only one building with convict made brick at that settlement, and a graveyard. The settlement was abandoned in 1847—the aborigines having mostly died. Only a few remaining were sent elsewhere.

In 1888 it was leased to various people and parts were thrown open for selection.

At the turn of the century an expedition of Victorian Field Naturalists visited Flinders Is., and were the first scientific people to look at it. After the 1918 war some soldiers were settled there. At the end of the 2nd World War the Bank of Tasmania assisted soldier settlement, and now there are 62 soldier settlers. The Government spent \$12,000,000 in clearing, pasture development, trace elements, and making water holes.

The islands are mostly granitic as in Wilson's Promontory and north-east Tasmania, and they break Bass Strait into two—the Bass basin where no oil has been discovered, and the eastern section which shows oil. There is a regular air service between Launceston and Whitemark—the capital—or a party can charter an aircraft at Moorabbin. There are good roads and every locality is accessible by a short walk. There are two hire car services, and bicycles are used. The climate is equitable, the rainfall being 25-35 inches, and there are strong westerly winds. The island is 40 miles long, 15-25 miles across, and has an area of 513 sq. miles. It has a

granite backbone, a little to west of centre, the highest peak being Strzelecki Peak named in 1843. It is 2,500 ft. high and one and a half miles from shore.

There is a narrow coastal plain covered by two sets of dunes, old consolidated dune limestone, and a younger set of dunes a few thousand years old only, and not mobile, but could be if the grass cover is interfered with. The only mobile dunes are towards the north.

Fossil remains of marsupials and birds found are thought to be the remains of food bones, left by the aborigines, although the Tasmanian aborigines were not there until they were settled in 1831; so in earlier days there were other aborigines.

The oldest rocks form the original backbone of Silurian—Devonian sandstone and siltstones. No fossils have been found in it. Intrusions of granite alter the sandstone by heat.

One picture showed a dyke within the granite. Subsequent to the intrusion of the granite into the sediment, there was a long period of erosion, and then 40 or 50 million years ago there were basalts extruded from an unknown volcano about the time the older volcanic rocks were formed in Victoria, as in Royal Park railway cutting. Under the basalt are sediments with large pieces of wood which are not eucalypts.

After these basalts were extruded, Flinders Is. was probably submerged in late Tertiary times, 5 or 6 million years ago. Now shell beds of late Tertiary age are found. Dune lime stones are of Pleistocene period—probably of the same time as Barwon Heads.

Water is a problem but there is spring water and shelter near Trouser's Point. Strzelecki Peak is a scenic reserve with only one track. There are some attractive valleys. As soon as the creeks get down to the coastal plain the water disappears. There are lime stone caves, and in one of the gullies a limestone cave still has water percolating through with stalactites forming.

The capital—Whitemark—has a population of 150-200 and a hotel, butcher, store, two houses, and flats to hire. At low tide the water goes a long way out and is very shallow. The little "Flinders Islander" comes in to the jetty. There are new dunes near the water and consolidated dunes in the background, with limestone sink-holes, and swallow holes

where a stream flows into underground caves.

There is an aerodrome at Pat's River—the only decent sized creek. There is a long runway for emergency landings, and it is one of the busiest in Tasmania with a regular service by Ansett. DC3's take out crayfish to Melbourne for processing—a big industry—and also meat.

Small aircraft come for fishing or for a holiday from Melbourne or Tasmania. One picture showed a stream with tree ferns in a sheltered valley. Low scrub, waist or shoulder high, makes it difficult to climb through. Eucalypts cut by the wind are dwarf, but in the valleys they may be 20-30 ft. high. Wallabies are in the high country, and are shot regularly for dog meat or sport.

About the central coast there is the Lady Barren Village with only one quarter of the population of Whitemark. It is the centre for the fishing fleet, in a sheltered position. C.S.I.R.O. have a bird banding project with mutton birds. The old islanders collect mutton birds but there is very little money return.

Sheep are carried by aircraft to other islands which are burnt off to promote grass growth.

One picture of Flinders Is. showed a sheer vertical face of granite with overhangs caused by sheets falling off. These are impossible to climb. There is a fauna reserve left in an uncleared wetter part. A valley almost N.W.-S.E. runs along joints in the granite, and along the course of the stream are tree ferns. The owner is a bird observer and intends to keep it uncleared.

Over the eastern coastal plain, granite peaks pop up above the plain as conical hills. Mr. Darragh went to Flinders Is. to collect fossils found on the east side. There is a lot of swamp and tea-tree, the latter being mostly cleared in 1952, but shelter belts have been left. Farmers complain that there are not enough belts, as it is very windy.

The soil is dark and peaty, and thin over the sand with marine fossil shells. The coastal plain has beautiful pastures supporting more sheep to the acre than in Victoria.

Cape Barren geese are plentiful and increasing. There are reserves for them on offshore islands, but unfortunately the birds see greener pastures on Flinders Is., where farmers are alarmed, and would get rid of them.

One, or sometimes more dams are sunk in every paddock, with water 10-

12 ft. down. Some are only scooped out by a mobile crane with bucket on a caterpillar tractor. Water comes in from underneath. In the coarse sands scooped or dug out, there are great numbers of shells, some of late Tertiary of 12-15 million years ago, or in the northern part, 1-2 million years ago. Many of the shells are quite complete and perfect, with a lot of fragments showing a great variety. There are four periods of deposition.

Rocks of this age do not outcrop in Victoria and one cannot collect fossils out of a dam, so Flinders Is. is unique and important, as it is one of the few places where shells of this age can be collected.

A 1,700 ft. granite peak, Mt. Tanner in the north has two huge "dishes" on a tower—a communication link with Tasmania. In the 20's and 30's there was tin mining, but the lode was not found. Probably it was from a dyke eroded out and brought into the valleys. Now a Victorian company is drilling in a valley between the three Patriarchs Peaks and Mt. Tanner. With the tin, large, not very good Topaz stones are found, and rock hounds come to fossick. Cape Barren Is. is a granite bleak landscape. A picture showed granite with black dykes of five grain diorite. Franklin Village has a school, post office, and very few people. Children are taken to school in Launceston, and many do not want to come back to live. Only small boats go there, but Cessna aircraft can land on any of the islands. Beautiful beaches are a feature of the islands.

The President thanked Mr. Darragh for his interesting talk. Mr. Morrison projected the slides.

The Secretary announced he had received several publications: "Birds of Flinders Is.", "Man, the Earth and Tomorrow", Current Natural Resources Magazine, and Australian Museum Na-

tional Photographic Index of Australian Birds. There is to be a competition to obtain slides of birds for the Australian Museum.

A letter from Mr. Myers of Rose Hill thanked the club for the appointment as our representative on the Lederderg Gorge Forest Park Committee.

Photoflora 1970 entries close 2 February, 1970. Forms can be obtained from Miss Betty Terrell, 24 Seymour Ave., Armadale.

A report from the Upper North East Field Naturalists Club was read.

A letter from K. Davis announced that the Mordialloc Council had abandoned the project to build the Marina, taking notice of the objections. Dr. A. Parkin requested aid from people with knowledge of botany to give wider experience to scouts in two excursions, one to Jumping Creek Rd., and the second to Mason's Falls on 2 November.

Exhibits

Mr. A. Morrison showed Graptolites from Enock's Point W., fruits of the Baobab tree (*Andansonina gregori*) with sweet pulp and black kidney shaped seeds. These are eaten by aborigines.

Woody pear—the fruits of *Xylomelum angustifolium* (W.A.), the big capsule of *Hakea platysperma* (W.A.) cut open showing the big flat winged seeds.

Mrs. North brought polished petrified wood from Oakey (Queensland), a tourist axe from Mt. Hagen, New Guinea, and an authentic axe, also a woven Buka basket from New Guinea.

Mr. Swaby showed a collection of garden grown Native plants.

Mr. McInnes showed living ostracods under the microscope. These are like the fossils in rock from Coimadaí.

Mrs. North reported the activities of the Montmorency Juniors.

"Save our Bushland"

This is a record of the proceedings of the public meeting which was held in the Lower Melbourne Town Hall and Scots Church Hall, on Friday, 29 August, 1969.

It is available from F.N.C.V., or V.N.P.A. sales officers at a cost of 50 cents (plus 9c postage).

Field Naturalists Club of Victoria

Established 1880

OBJECTS: To stimulate interest in natural history and to preserve and protect Australian fauna and flora.

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His Excellency Major-General Sir ROHAN DELACOMBE, K.B.E., C.B., D.S.O.

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Membership of the F.N.C.V. is open to any person interested in natural history. The *Victorian Naturalist* is distributed free to all members, the club's reference and lending library is available, and other activities are indicated in reports set out in the several preceding pages of this magazine.

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